Work Plan:	August	1, 2014	1	Revised:	
Reporting P	eriod: _			to	

Goal 2: Safe and Clean Water - Ensure drinking water is safe.	Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide
healthy habitat for fish, plants, and wildlife.	, , , , , , , , , , , , , , , , , , , ,

Objective 2.2: Protect Water Quality - Protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis - Use pollution prevention and restoration approaches to protect and restore the quality of rivers, lakes, and streams on a watershed basis.

Work Plan Component/Program: Water Quality Standards Workyears:	EPA Contact (s): Denise Hakowski	State Contact (s): Tom Barron	PRC: 202B06	
---	----------------------------------	-------------------------------	-------------	--

Program Description:

Pennsylvania's Water Quality Standards Program - Stream Redesignation Evaluation

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
Number of Pennsylvania's watersheds where: water quality standards are met or improved in at least 80% of the assessed water segments which result in improved conditions of water quality.	WQ-3(a): Number, and national percent, of States and Territories and authorized Tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA and reflect new scientific information from EPA or other resources not considered in the previous standards.	<ul> <li>WATER QUALITY STANDARDS PROGRAM:</li> <li>OUTPUT:</li> <li>Complete water body survey evaluation reports for existing use determinations and compile into 2 rulemakings for the PA Environmental Quality Board (EQB) and EPA Region III consideration. These rulemakings are tentatively scheduled for March and October of each year.</li> <li>ACTIVITIES:</li> <li>During CY15, conduct approximately 12 stream surveys in order to determine their appropriate aquatic life or existing uses. The proposed water body surveys originate from EQB re-designation petitions, requests from the PA Fish and Boat Commission (PFBC), or needs identified within the Department. Physical habitat and biological information will be collected following DEP's "Aquatic Life Antidegradation Protection Surveys" (January 12, 2012) and "In-Stream Comprehensive Evaluation Survey Protocol (August 23, 2011) Quality Assurance Plans. Survey purposes are to evaluate water use designations and identify environmental attributes - particularly outstanding ecological values, which may require special water quality protection.</li> </ul>	

Work Plan:	August	1, 2014	1	Revised:	
Reporting P	eriod: _			to	·

Goal 2: Safe and Clean Water - Ensure drinking water is safe	. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human heal	lth, support economic and recreational activities, and provide
healthy habitat for fish, plants, and wildlife.		

Objective 2.2: Protect Water Quality - Protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis - Use pollution prevention and restoration approaches to protect and restore the quality of rivers, lakes, and streams on a watershed basis.

Work Plan Component/Program:	EPA Contact (s): Denise Hakowski	State Contact (s): Michael "Josh" Lookenbill	PRC: 202B06
Water Quality Standards	60000	S200	l I
Workyears:			

Program Description:

Pennsylvania's Water Quality Standards Program – PWS Use Determinations

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
Number of Pennsylvania's watersheds where: water quality standards are met or improved in at least 80% of the assessed water segments which result in improved conditions of water quality.	WQ-3(a): Number, and national percent, of States and Territories and authorized Tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA and reflect new scientific information from EPA or other resources not considered in the previous standards.	WATER QUALITY STANDARDS PROGRAM:  OUTPUT:  Water quality assessment summaries for Potable Water Supply use evaluations and input to PA's Water Quality Assessment Database  ACTIVITIES:  DEP staff will assess the Potable Water Supply (PWS) use attainment status of approximately 55 water body segments by evaluating their physical/chemical quality using procedures outlined in Appendix A of Pennsylvania's "Instream Comprehensive Evaluation Surveys" (August 23, 2011). These PWS assessment results will be captured in PA's Integrated Water Quality Monitoring and Assessment Report, as well as rulemaking recommendations, as warranted.	

Work Plan: August 1, 2014 / Revised: \_

			Reporting Period:	to
Goal 2: Safe and Clean Water - Ensure dr healthy habitat for fish, plants, and wildlife.	inking water is safe. Restore and maintain oceans,	watersheds, and their aquatic ecosystems to p	orotect human health, support eco	nomic and recreational activities, and provide
Objective 2: Protect Water Quality - Protect	t the quality of rivers, lakes and streams on a water	rshed basis and protect coastal and ocean wat	ers.	
Subobjective 2.2.1: Improve Water Quality	on a Watershed Basis - Use pollution prevention an	d restoration approaches to protect and resto	ore the quality of rivers, lakes, and	streams on a watershed basis.
Work Plan Component/Program:	EPA Contact (s): Francisco Cruz	State Contact (s): Tom Barron	PRC: 202B80	

NPDES Permitting
Workyears:
Program Description: Cooling Water Intake Rules & Performance Standards Evaluations

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
Control discharges to protect public health, meet technology based standards, and meet and improve water quality.	WQ-12a: Percent of non-tribal facilities covered by NPDES permits that are considered current.	OUTPUT:     Reviews of information submitted by existing facilities, demonstrations, and other forms of documentation implemented under Section 316(b) of the Clean Water Act to reduce aquatic life impacts from cooling water intake structures	SI AT
	WQ-19a: Number, and national percent, of high priority state NPDES permits that are issued as scheduled.	<ul> <li>ACTIVITIES:</li> <li>Since the Section 316(b) of the Clean Water Act Phase II rule was suspended by the EPA in May 2007 in response to the Riverkeeper II decision, state agencies are proceeding with implementation of 316(b) on a case-by-case basis using Best Professional Judgment (BPJ). There were 21 facilities categorized as existing Phase II facilities within Pennsylvania (see table below) that began collecting information about their intake structure after the Phase II rule was promulgated in 2004. Despite the suspension of the rule, these facilities are required to demonstrate that they have the Best Technology Available (BTA) for minimizing impingement mortality and entrainment of fishes and other aquatic life or propose technologies to reduce impingement and entrainment. The facilities were required to submit an impingement mortality and entrainment characterization study and technology evaluations to determine the BTA. These facilities were requested to submit this information between July 2008 and January 2009. Review is on-going and is prioritized on the basis of permit renewal dates. Based on recent press releases, and other notifications, several of these facilities are scheduled to retire units between 2012 and 2015.</li> <li>This review, however, is no longer limited just to the original Phase II facilities. Section 316(b) reviews are ongoing and prioritized on the basis of permit renewal date or relative impact, and other relevant factors. EPA finalized the Existing Facilities Rule on May 19, 2014, published in the Federal Register on August 15, 2014. Staff has begun implementing and will continue to implement the new regulation by incorporating the requirements into draft NPDES permits as these permits come up for renewal.</li> </ul>	

Work Plan: _	August 1, 2014	/ Revised:	
Reporting Pe	riod:	to	

Goal 2: Safe and Clean Water - Ensure drinking water is safe.	Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and re	creational activities, and provide
healthy habitat for fish, plants, and wildlife.		

Objective 2.2: Protect Water Quality - Protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis – Use pollution prevention and restoration approaches to protect and restore the quality of rivers, lakes, and streams on a watershed basis.

Water Quality Standards Workyears:	Work Plan Component/Program:	EPA Contact (s): William Richardson	State Contact (s): Michael "Josh" Lookenbill	PRC: 202B06
Workyears:	Water Quality Standards	0.30/25		
	Workyears:			

Program Description:

Pennsylvania's Water Quality Standards Program -Increase Monitoring in Areas of Gas Drilling and Related Wastewater Treatment

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
watersheds where: water quality standards are <i>met or improved</i> in at least 80% of the assessed water segments which result in improved conditions of water quality.  EP inf	abmitted new or revised water uality criteria acceptable to PA and reflect new scientific aformation from EPA or other isources not considered in the revious standards.	WATER QUALITY STANDARDS PROGRAM:  OUTPUT:  • The collected water quality monitor data will form a dynamic database for use by managers to identify and document problems as they are uncovered.  • Stream assessment samples will be analyzed and used by staff biologists for cause/effect assessments.  • The DEP Bureau of Radiation Protection has undertaken a large scale radiological evaluation of the oil and gas industry. As a result, the radiological sampling component of our general monitoring program will be conducted only for spills or other emergencies.  ACTIVITIES:  • Increase the number of stream assessments in areas of high density gas drilling activities and related wastewater treatment facilities in order to both establish pre-drilling conditions and monitor for changes as drilling proceeds.  • Chemistry samples will be taken upstream (control) and downstream of treatment facility discharges, in areas of high density drilling activities, where drilling occurs in sensitive areas, and in response to any flow back water spills. The samples may include major parameters and metals found in fracking flow back water.  • Staff will deploy continuous instream water quality monitors to gather water temperature, pH, dissolved oxygen, and specific conductance data. The continuous data will be maintained in and analyzed with AQUARIUS software. Must maintain appropriate software license(s).	

	Work Plan: August 1, 2014 / Revised:  Reporting Period: to
al 2: Safe and Clean Water – Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystem	s to protect human health, support economic and recreational activities, and provide

healthy habitat for fish, plants, and wildlife.

Objective 2.2: Protect Water Quality – Protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis - Use pollution prevention and restoration approaches to protect and restore the quality of rivers, lakes, and streams on a watershed basis.

Vork Plan Component/Program: Water Quality Standards	EPA Contact (s): William Richardson	State Contact (s): Michael "Josh" Lookenbill	PRC: 202B06
Workyears:			

**Program Description:** 

Pennsylvania's Water Quality Standards Program - Macroinvertebrate Sample Processing and Taxonomic Identification for Special Biological Monitoring Projects

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
Number of Pennsylvania's watersheds where: water quality standards are met or improved in at least 80% of the assessed water segments which result in improved conditions of water quality.	WQ-3(a): Number, and national percent, of States and Territories and authorized Tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA and reflect new scientific information from EPA or other resources not considered in the previous standards.	WATER QUALITY STANDARDS PROGRAM:  OUTPUT:  Macroinvertebrate taxa lists will be generated for the use in evaluating the potential of a macroinvertebrate Index of Biotic Integrity (IBI) for Pennsylvania's large rivers, other biological metric protocol revisions, water quality standards for aquatic life use evaluations, and impairment assessments.  ACTIVITIES:  DEP collects large river macroinvertebrate samples in an ongoing effort to develop a large river sampling protocol. Additional biological monitoring projects are anticipated related to large river assessments and monitoring of oil and gas drilling.	

Work Plan: August 1, 2014	/ Revised:	
Reporting Period:	to	

Goal 2: Safe and Clean Water - Ensure drinking water is safe	e. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recre	eational activities, and provide
ealthy habitat for fish, plants, and wildlife.		

Objective 2.2: Protect Water Quality - Protect the quality of rivers, lakes and streams on a watershed basis and protect coastal and ocean waters.

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis – Use pollution prevention and restoration approaches to protect and restore the quality of rivers, lakes, and streams on a watershed basis.

Work Plan Component/Program:	EPA Contact (s): William Richardson	State Contact (s): Michael "Josh" Lookenbill	PRC: 202B06
Water Quality Standards			
Workyears:			

#### Program Description:

Pennsylvania's Water Quality Standards Program - Monitoring in response to diseased YOY (Young of Year) and intersex smallmouth bass

Environmental Outcomes	Measures	Outputs for CY 2015 (Commitments)	Status/Comment
Number of Pennsylvania's watersheds where: water quality standards are met or improved in at least 80% of the assessed water segments which result in improved conditions of water quality.	WQ-3(a): Number, and national percent, of States and Territories and authorized Tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA and reflect new scientific information from EPA or other resources not considered in the previous standards.	WATER QUALITY STANDARDS PROGRAM:  OUTPUT:  Results of the efforts will be a comprehensive assessment of the Susquehanna River and tributaries to determine and identify if any water quality conditions contribute to the smallmouth bass problem. Results will be reported in the 2016 Integrated Report.  ACTIVITIES: Continue studies which began in 2012 (primary focus on the Susquehanna River basin). The work includes deploying continuous instream monitors at multiple locations throughout the summer to continuously measure dissolved oxygen, pH, temperature and specific conductance. Conduct water quality transects at multiple locations to determine the distribution of dissolved oxygen and the mixing characteristics near the mouths of smaller tributaries and throughout the basin. These studies will help determine if these factors that could be contributing to elevated smallmouth disease prevalence. Additional chemical testing will be conducted to attempt to determine the contributing factors to the intersex condition. Instantaneous chemical samples will be collected and passive samplers will be deployed. The passive samplers concentrate the chemicals present in the water column to determine if pesticides, herbicides, or endocrine disrupters are contributing to intersex condition observed in adult bass.	

					Work Plan: <u>August 1, 2014</u> Reporting Period:	1 / Revised: to
oal 2: Safe and Clean Water – ealthy habitat for fish, plants, and		safe. Restor	re and maintain oceans, wa	atersheds, and their aquatic ecosystems to	protect human health, support econ	nomic and recreational activities, and provide
bjective 2.2: Protect Water Qua	lity – Protect the quality o	of rivers, lak	es and streams on a water	shed basis and protect coastal and ocean	waters.	
ubobjective 2.2.1: Improve Wate	r Quality on a Watershed	d Basis – Use	pollution prevention and	restoration approaches to protect and res	tore the quality of rivers, lakes, and	streams on a watershed basis.
Vork Plan Component/Program: Vater Quality Standards Vorkyears:	EP.	A Contact (	s): Denise Hakowski	State Contact (s): Tom Barron	PRC: 202B06	
rogram Description: Pennsylvania's Water Quality	Standards Program – To	oxicity testin	g for impacts of chloride a	nd sulfate on sensitive species, and repres	entative of the ionic matrices of Pen	nsylvania waters.
Environmental Outcomes	Measures			Outputs for CY 2015 (Commitments)		Status/Comment
lumber of Pennsylvania's vatersheds where: water quality	WQ-3(a): Number, and repercent, of States and Ter	rritories	VATER QUALITY STANI	DARDS PROGRAM:		

Environmental Outcomes	Measures	(Communents)	Status/Comment
Number of Pennsylvania's watersheds where: water quality standards are met or improved in at least 80% of the assessed water segments which result in improved conditions of water quality.	WQ-3(a): Number, and national percent, of States and Territories and authorized Tribes that within the preceding three year period, submitted new or revised water quality criteria acceptable to EPA and reflect new scientific information from EPA or other resources not considered in the previous standards.	OUTPUT:  • PA DEP DWQS would like to contract with researcher(s) to continue to conduct specific toxicity testing studies with sensitive species to characterize chloride and sulfate toxicity, representative of Pennsylvania waters and ion matrices. These toxicity studies would continue to target appropriate sensitive mayfly and other representative species of Pennsylvania freshwater aquatic systems, under various representative pollutant and ionic matrices or dilution series.  ACTIVITIES:  • Since DEP does not have the expertise to do this requisite toxicity testing, this work will be contracted to experts in toxicity testing.	